

Acc. Nr:

AP0046634

Abstracting Service:

CHEMICAL ABST. 4-70

Ref. Code:

4R 0131

82444w Large-scale magnesite and chromium magnesite refractories for open-hearth furnaces. Cherepov, P. V.; Simonov, K. V.; Koren'kov, V. N.; Bezryadnov, A. A. (USSR). *Ogneupory* 1970, 35(1), 14-15 (Russ). The attempt was made to substitute hitherto used refractory bricks  $230 \times 115 \times 65$  mm for bricks of size  $300 \times 150 \times 65$  mm. The performance of the press is increased by 4-5 ton/day. Also, the efficiency of bricklayers building blast furnaces with larger bricks rises 10-15%. In addn., with larger bricks the no. of crannies in brick-work is diminished in the horizontal direction which improves the servability of the brick-work. J. Jindra

EB

REEL/FRAE

19781946

18

1/2 006 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--PREPARATION OF BLACK CEMENT -U-

AUTHOR--(05)-KRAVCHENKO, I.V., CHEREPOVSKIY, S.S., ALESHINA, O.K.,  
CHISTYAKOV, G.I., DMITRIYEVA, V.A.  
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 267,430  
REFERENCE--UTKRYTIYA, IZOBRE., PROM. OBRATSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CEMENT, -PATENT, PIGMENT, MANGANESE COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3002/1404

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128803

UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0128803

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BLACK CEMENT BASED ON ORDINARY PORTLAND CEMENT WAS OBTAINED BY INTRODUCING A PIGMENT ADDITIVE INTO THE CLINKER. TO OBTAIN A DEEPER TONE, THE CLINKER WITH A MN ORE ADDITIVE WAS COOLED IN AN O ENRICHED GAS MEDIUM FROM ITS SINTERING TEMP. TO 900DEGREES. FACILITY: STATE SCIENTIFIC RESEARCH INSTITUTE OF THE CEMENT INDUSTRY.

UNCLASSIFIED

1/2 006 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--WHITENING OF A PORTLAND CEMENT CLINKER -U-

AUTHOR--(05)--KRAVCHENKO, I.V., CHEREPOVSKIY, S.S., ALESHINA, O.K.,  
DMITRIYEVA, V.A., CHISTYAKOV, G.I.  
COUNTRY OF INFO--USSR

SOURCE--USSR. 267,432  
REFERENCE--UTKRYTIYA, IZOBRET., PRJM. OBRAZTSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CEMENT, PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1434

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128833

UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0128833

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. A PORTLAND CEMENT CLINKER WAS  
WHITENED BY BEING COOLED FROM 1200 TO 450DEGREES IN A REDUCING GAS  
MEDIUM CONTG. 3-10 VOL. PERCENT CO PLUS H. FACILITY: STATE  
SCIENTIFIC RESEARCH INSTITUTE OF THE CEMENT INDUSTRY.

UNCLASSIFIED

1/2 010  
TITLE--CRANK PRESS -U- UNCLASSIFIED PROCESSING DATE--18SEP70  
AUTHOR-(03)-PRUTSKOV, R.N., CHEREPUKHIN, A.G., KOZHEVNIKOV, V.A.  
COUNTRY OF INFO--USSR  
SOURCE--U.S.S.R. 235545  
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI NO 05  
DATE PUBLISHED--30JUN69  
  
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--PATENT, PRESS, FORGING MACHINERY  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1983/0156 STEP NO--UR/0482/69/000/000/0000/0000  
CIRC ACCESSION NO--AA0053169  
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AA0053169

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CRANK PRESS ENSURING A LONGER LIFE OF ITS FRICTION CLUTCH 2 AND BRAKE 3, INCLUDES SOLENOID VALVE CONTROL MOUNTED ON SLIDE 8 WITH DOG CLUTCH 10 CENTERED ON STUD 11. THE CRANKSHAFT 1 IS SUPPORTED BY BEARINGS 4, AND ACTUATES CONROD 5 AND CONTROL UNIT 6, WHILE CLUTCH 10 IS CONTROLLED BY A PNEUMATIC CYLINDER WITH LIMITED DISPLACEMENT, AND WITH A RETURN SPRING. SLIDE 8 CARRIES FLANGE 17 LIMITING UPWARD MOTION DUE TO LIFT OF AIR BALANCING UNIT 18. THE CLUTCH 10 IS PROVIDED WITH PINS CONTACTING LIMIT SWITCHES FOR SIGNALLING ITS POSITION TO THE SOLENOID VALVE CONTROLS. THE CRANKSHAFT ROTATES IN BALL BEARINGS DURING IDLING PERIODS, BUT IS SUPPORTED BY SLIDE BEARING WHEN LOADED. THE DOG CLUTCH IS ENGAGED FOR INITIATING THE WORKING STROKE WHEN THE PNEUMATIC CYLINDER IS PRESSURISED.

UNCLASSIFIED

1/2 014

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--LACQUERS AND LACQUER COATINGS BASED ON FTORLONS -U-

AUTHOR--(03)-BUGORKOVA, N.A., CHEGODAYEV, D.D., CHERESHKEVICH, L.V.

COUNTRY OF INFO--USSR

SOURCE--(USSR). PLAST. MASSY 1970, 1(5), 65-7

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--LACQUER, FLUORINATED ORGANIC COMPOUND/(U)FTORLON FLUORINE  
PLASTIC, (U)F42 FLUORINE PLASTIC, (U)F32L FLUORINE PLASTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3006/0995

STEP NO--UR/0191/70/001/005/0065/0067

CIRC ACCESSION NO--AP0134707

UNCLASSIFIED



2/2 014

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0134707

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLY. OF FTORLONS (F-42 AND F-32L) IN HCONME SUB2, KETONES, AND ESTERS SUGGESTS THEIR USE AS COATINGS. HOWEVER, DUE TO PARTIAL CRYSTALLINITY, THE SWELLING OF F-42 OR F-32L FILMS IN SOLVENTS IS NOT UNIFORM AND SURFACE CRAZING OCCURS MIXED SOLVENTS, SUCH AS ACETONE 15, ACOET 30, ACO(CH SUB2) SUB4 ME 30, CYCLOHEXANONE 10, AND ET CELLOSOLVE 15 PARTS REMEDY THE SITUATION. COATINGS BASED ON F-42 OR F-32L WITHSTOOD A 1 MONTH CONTACT WITH 37PERCENT HCL, 98PERCENT HNO SUB3, 50PERCENT ACOH, 40PERCENT NAOH OR 98PERCENT H SUB2 SO SUB4 AT 50DEGREES WITHOUT CHANGE.

UNCLASSIFIED

c. Nr.

AP0107157

Abstracting Service:

CHEMICAL ABST. 3-70

CHERESHKEVICH L.V.

Ref. Code

4P0303

123011v Preparation of high-quality pentaplast [poly-  
[3,3-bis(chloromethyl)oxacyclobutane]] coatings. Bugorkova,  
N. A.; Chegodaev, D. D.; Chereshevich, L. V.; Nikolaev, A. F.  
(USSR). *Lakokrasoch. Mater. Ikh Primen.* 1970, (1), 34-7  
(Russ). Coatings of the title polymer (I) on steel or Al were ob-  
tained by brushing on the I suspensions and heating at 200°. The  
coatings were cooled at various rates: in a thermostat at  
1-2°/min, in air at 3-7°/min, or by quenching in water. The best  
films were obtained by quenching; they had no shrinkage, 16.0%  
crystallinity, no internal stresses, 4.5-5.0 kg/mm adhesion  
strength to metals, 380-400 kg/cm<sup>2</sup> tensile strength at break, ~50  
kg cm impact strength, 20% elongation at break, and  $1 \times 10^{16}$   
ohm cm vol. resistance at 20°. There was no corrosion of metals  
coated with I after 3 months immersion in 30% HNO<sub>3</sub> soln., or 8  
months immersions in 37% HCl, 98% H<sub>2</sub>SO<sub>4</sub>, or 40% NaOH solns.

CPJR

REEL/FRAME  
19890552

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USSR

UDC 542.61:621.359.7

MOSKVIN, L. N., and CHERESHKEVICH, YU. L.

"Electrodialysis Through Extraction Membranes. I. Extraction of Pd From Chloride Solutions"

Leningrad, Radiokhimiya, Vol 13, No 5, 1971, pp 768-771

Abstract: It was shown that palladium may be extracted from chloride solutions through extraction membranes under the action of electric current. The rate of extraction is not a simple function of the coefficients of distribution. For example, normally palladium is extracted equally well by tributyl phosphate and n-hexanol from 3N HCl. However, through the extraction membrane almost no palladium is collected by n-hexanol, while tributyl-phosphate extracts it almost quantitatively. The composition of the starting solution also shows an effect on the extraction through the membrane; the rate of palladium extraction from 3N HCl is about three times that of the rate of extraction from 0.1 N HCl + 0.5 N NaCl.

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- 12 -

USSR

UDC:620.179.152

FIRSTOV, V. G., MAYOROV, A. N., SUL'KIN, A. G., CHEREVATENKO, G. A. and  
YAKSHIN, V. V.

"New Sharp-Focus Iridium-192 Sources for Radiography"

Defektoskopiya, No. 3, 1970, pp. 95-100

Abstract: Some problems involved in the application of sharp-focus iridium-192 sources in the radiography of industrial products are studied. The expediency of using these sources for radioscopy of welded tubes is demonstrated, particularly for testing in difficult accessible locations at short focal lengths. The results produced are explained using data on quantities comparing the unsharpness of gamma images and spectral distributions from standard and sharp-focus sources. The use of sharp-focus gamma radiation sources of this type allows radiographic testing of industrial products at focal distances 3-times shorter than when standard sources are used, expanding the boundaries of application of gamma defectoscopy of welded joints. The sensitivity of radiography using

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USSR

UDC:620.179.152

FIRSTOV, V. G., MAYOROV, A. N., SUL'KIN, A. G., ~~CHEREVATENKO, G. A.~~  
YAKSHIN, V. V., Defektoskopiya, No. 3, 1970, pp. 95-100

sharp-focus sources is improved in comparison with standard sources, both as a result of the decrease in the geometric unsharpness of gamma images and due to improvement of the spectral distribution of the radiation.

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- 104 -

USSR

UDC 624.07:534.1

MANEVICH, L. I., CHEREVATSKIY, B. P.

"On an Approximate Determination of Normal Vibrations of a Nonlinear System With Two Degrees of Freedom"

V sb. Vopr. prochnosti, nadezhnosti razrush. mekh. sistem (Problems of the Strength, Reliability and Breakdown of Mechanical Systems -- Collection of Works), Dnepropetrovsk, 1969, pp 26-34 (from RZh-Mekhanika, No 6, Jun 72, Abstract No 6V228)

Translation: An approximate method for determining normal vibrations of non-linear and linear systems of asymmetric configuration with two degrees of freedom is presented. The method is based on the introduction of a small parameter and an asymptotic analysis of the equations of motion. The properties of normal vibrations are used, making it possible to obtain integrable nonlinear systems of equations in the first approximation for each of the two normal forms. The corresponding forms and periods of the nonlinear oscillations are determined. The equivalent characteristics of sequentially connected nonlinear springs with analytical characteristics are determined.

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USSR

MANEVICH, L. I., CHEREVATSKIY, B. P., Vopr. prochnosti, nadezhnosti razrush. mekh. sistem, Dnepropetrovsk, 1969, pp 26-34

The stability of the normal solutions is discussed and threshold amplitudes of the oscillations are determined. S. A. Dobrodeyev.

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USSR

MANEVICH, L. I., CHEREVATSKIY, B. P.

"Approximate Determination of Quasinormal Oscillations of a Nonlinear System with Two Degrees of Freedom in the Presence of Viscous Friction"

Tr. Dnepropetr. in-ta inzh. zh.-d. transp. (Works of Dnepropetrovsk Institute of Railroad Transportation Engineers), 1970, vyp. 110, pp 36-41 (from RZh-Mekhanika, No 11, Nov 70, Abstract No 11A124)

Translation: The equations of motion of an autonomous system with two degrees of freedom distinguished from linear by "nonlinearly elastic" terms are written out. The case is investigated where one of the masses is much smaller than the other. It is proposed that the solution be found in the form of a series with respect to powers of the small parameter equal to the ratio of the smaller mass to the larger mass. The "generating" equations are presented. The bibliography has 9 entries.

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USSR

UDC 533.9:538.566

LAVROVSKIY, V. A., CHEREVATSKIY, N. YA., and KHARCHENKO, I. F.

"Controlling the Characteristics of Oscillations in a Plasma-Beam Discharge"

Minsk, Kolebaniya i Volny v Plazme. (Oscillations and Waves in a Plasma),  
"Nauka i Tekhnika," 1971, pp 85-87

Abstract: The properties of a plasma and its behavior under various conditions are determined to a large degree by the processes of different types of instabilities developing. It is therefore quite important that these processes be investigated. Here the authors study the effect on a plasma-beam discharge of regular electromagnetic waves propagating along the axis of the discharge. They find and clarify the relationship that exists between the discharge parameters and the frequency of the extrinsic signal which effectively influences the character of the oscillations. They determine the values of the powers necessary for effective control of the oscillations. A figure shows the influence of the control signal on the level of the oscillations, and another figure shows spectral variation near the control signal. The authors find that the propagation of a monochromatic electromagnetic wave along the plasma-beam system will result in the suppression of instability in a wide frequency range and the simultaneous excitation of the process of

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- 93 -

USSR

LAVROVSKIY, V. A., et al., Oscillations and Waves in a Plasma, "Nauka i Tekhniak," 1971, pp 85-87

developing instability at the frequencies of the extrinsic signal and its harmonics. The article contains 2 illustrations and 4 bibliographic entries.

2/2

AA0052668

CHEREVCHUK

UR 0482

VI

Soviet Inventions Illustrated, Section III Mechanical and General, Derwent, 1-70

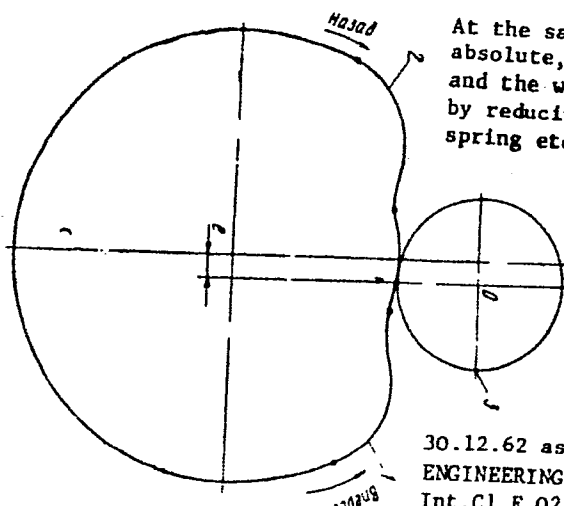
241816 HIGH-PRESSURE FUEL PUMP DRIVE for marine two-stroke internal combustion engine, comprising pushrod interacting with cam washer on the reversing distributor shaft, with forward and reverse working profile, differing in the axis of the pushrod being displaced relative to that of the washer towards the forward profile, which is not symmetrical with the reverse profile, being formed by different curves. This enables the dimensions and weight of the drive to be reduced. Working profile, being formed by different curves. This enables the dimensions and weight of the drive to be reduced. Working profiles 1 and 2 for forward and reverse are dissimilar. The axis of the roller of pushrod 3, which is also the axis of the fuel pump plunger, is displaced relative to the washer axis to the extent "e". The normal component of force acting on the pushrod from the disc can be reduced by 20-25 per cent. in forward motion, and increased to the same extent in reverse.

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AA0052668



At the same time these forces balance out in the absolute, so that wear on the washer is more even and the weight and size of the drive can be reduced by reducing weight and size of the roller, pushrod, spring etc.

30.12.62 as 819544/24-6.SOLOV'EV O.P.et al.BRIANSK  
ENGINEERING WORKS.(1.9.69) Bul 14/18.4.69. Class 46c.  
Int.Cl.F 02f.

Solov'yev, O. P.; Cherevchuk, V. I.; Antropov, G. A.  
Bryanskiy Mashinostroitel'nyy Zavod

3/2

19821423

Communications

USSR

UDC: 621.372.061

CHEREVKOV, K. V.

"Synopsis of Some Problems in the Theory and Methods of Planning Multifunctional Space Communications Links"

Moscow, V sb. Metody pomekhoustoychivogo priyema ChM i FM (Methods of Interference-Free FM and PM Reception -- collection of works), "Sov. radio", 1970, pp 203-220 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A103)

Translation: A number of specific characteristics which set space communications links apart from ordinary lines are taken into account in substantiating and selecting a criterion for evaluating the resistance to interference of the discrete and analog methods of transmitting continuous information. A canonical form of representation of the output signal-to-noise ratio is proposed which is applicable to both the discrete and analog methods. The results of investigations of the resistance to interference of discrete and analog methods of transmitting continuous information are presented, and a procedure is given for optimum selection of the principal parameters of these processes together with a comparison with respect to the proposed  
1/1 criterion. Resume.

1/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--SELECTION OF A METHOD FOR THE QUANTITATIVE EVALUATION OF THE  
CHEMICAL STABILITY OF FIBERS, SUCH AS POLY(VINYL ALCOHOL) FIBERS -U-  
AUTHOR-(03)-PEREPEL'KIN, K.YE., UTEVSKIY, L.E., CHEREYSKIY, Z.YU.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD), 1970, 43(2) 391-5

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--CHEMICAL STABILITY, POLYVINYL ALCOHOL FIBER, CHEMICAL  
DECOMPOSITION, SULFURIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1992/0303

STEP NO--UR/0080/70/043/002/0391/0395

CIRC ACCESSION NO--AP0111497

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111497

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOST SENSITIVE, REPRODUCIBLE, AND RAPID QUANT. METHOD OF EVALUATING THE ACID RESISTANCE OF POLYVINYL ALC.) (I) FIBERS CONSISTED OF DETG. THE DEGRADATION TIME OF I FIBERS IN 30PERCENT H SUB2 SO SUB4. THE METHOD PROPOSED WAS SUPERIOR TO THE KINETIC METHOD AS IT WAS UNAFFECTED BY A VARYING DIFFUSION COEFF. AND HEATING RATE.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--SELECTION OF A METHOD FOR THE QUANTITATIVE EVALUATION OF THE  
CHEMICAL STABILITY OF FIBERS, SUCH AS POLY(VINYL ALCOHOL) FIBERS -U-  
AUTHOR-(03)-PEREPELKIN, K.YE., UTEVSKIY, L.E., CHEREYSKIY, Z.YU.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD), 1970, 43(2) 391-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, CHEMISTRY  
TOPIC TAGS--CHEMICAL STABILITY, POLYVINYL ALCOHOL FIBER, CHEMICAL  
DECOMPOSITION, SULFURIC ACID  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1992/0303 STEP NO--UR/0080/70/043/002/0391/0395  
CIRC ACCESSION NO--AP0111497  
UNCLASSIFIED



2/2 009

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION N.J.—AP0111497

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOST SENSITIVE, REPRODUCIBLE, AND RAPID QUANT. METHOD OF EVALUATING THE ACID RESISTANCE OF POLY(VINYL ALC.) (I) FIBERS CONSISTED OF DETG. THE DEGRADATION TIME OF I FIBERS IN 30PERCENT H SUB2 SO SUB4. THE METHOD PROPOSED WAS SUPERIOR TO THE KINETIC METHOD AS IT WAS UNAFFECTED BY A VARYING DIFFUSION COEFF. AND HEATING RATE.

UNCLASSIFIED

USSR

UDC 575.1:591.526+576.8.095.14

DUBININ, N. P., SHEVCHENKO, V. A., ALEKSEYENOK, A. Ya., CHEREZHANOVA, I. V.,  
and TISHCHENKO, Ye. M.

"Genetic Processes in Populations Exposed to Ionizing Radiation"

Moscow, Uspekhi Sovremennoy Genetiki, No 4, 1972, pp 170-205

Abstract: The article is a review of experimental and theoretical studies concerned with the effects of radiation on populations and biocenoses. It summarizes and systematizes the published data and the authors' long-term observations on the genetic processes that take place in populations chronically and protractedly exposed to radiation. It also examines and discusses the processes at work in populations of unicellular organisms (microalgae), higher plants, and mammals. The genetic adaptation of populations to chronic, protracted radiation is discussed, 13 tables, 13 illustrations, bibliography of 7 references.

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USSR

UDC 621.396.6.002:621.793(088.8)

KRYZHANOVSKIY, B. P., CHEREZOVA, L. A.

"A Method of Producing Electrically Conductive Coatings"

USSR Author's Certificate No 255394, Filed 1 Jul 68, Published 6 Apr 70 (from  
RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10V293 P)

Translation: A method is proposed for producing electrically conductive coatings. As a distinguishing feature of the patent, the procedure is designed for increasing the surface conductivity of dielectrics and for making them more stable in reducing media (such as hydrogen, carbon monoxide and hydrocarbons). The surface of the dielectric is coated with a layer of a mixture of silicon dioxide and titanium dioxide and treated in an atmosphere of dry ammonia at a temperature of 800-1,000°C.

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1/2 026 UNCLASSIFIED  
TITLE--COURSE OF PERIARTERITIS NODOSA -U-

PROCESSING DATE--30OCT70

AUTHOR--CHERFAS, Z.M.

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 5, PP 93-96

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CARDIOVASCULAR SYSTEM DISEASE, DIAGNOSTIC MEDICINE, BIOPSY,  
AUTOPSY, LEUKOCYTOSIS, KIDNEY, NERVOUS SYSTEM, LESION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1998/0470

STEP NO--UR/0504/70/042/005/0093/0096

CIRC ACCESSION NO--AP0121144

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121144

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CLINICAL OBSERVATIONS OVER 60 PATIENTS WITH PERIARTERITIS NODOSA ARE GIVEN. DIAGNOSIS MADE IN 24 PATIENTS WAS CONFIRMED BY THE DATA OF DERM MUSCULAR BIOPSY, AND IN 19 CASES, BY THE RESULTS OF AUTOPSY FINDINGS. THE AUTHOR DISTINGUISHES TWO VARIANTS OF THE COURSE OF PERIARTERITIS NODOSA: ENCOUNTERED MORE SELDOM, RAPIDLY PROGRESSING AND ENCOUNTERED MORE OFTEN, SLOWLY PROGRESSING. WITH A RAPIDLY PROGRESSING COURSE THE ONSET OF THE DISEASE WAS USUALLY ACUTE OR SUBACUTE, SIMULTANEOUS INVOLVEMENT OF A NUMBER OF ORGANS AND SYSTEMS IN THE PATHOLOGICAL PROCESS BEING OBSERVED. IN COMPARISON WITH A SLOWLY PROGRESSING COURSE EXHAUSTION, INTOXICATION, LEUCOCYTOSIS, ESR ACCELERATION, DYSPROTEINEMIA, CORONARY SYNDROME, CARDIO VASCULAR INSUFFICIENCY OF THE II-III DEGREE, INFILTRATIVE CHANGES IN THE LUNGS, LESIONS OF THE KIDNEY AND THE PERIPHERAL NERVOUS SYSTEM WERE ENCOUNTERED MORE OFTEN. THE LIFE SPAN OF PATIENTS IN THIS CASE IS USUALLY 6-18 MONTHS. THE SLOWLY PROGRESSING COURSE OF PERIARTERITIS NODOSA WAS USUALLY CHARACTERIZED BY A GRADUAL ONSET, LESSER MARKEDNESS OF CLINICAL SYMPTOMS AND GRADUAL INVOLVEMENT OF A NUMBER OF ORGANS AND SYSTEMS IN THE PATHOLOGICAL PROCESS. WITH SUCH A DEVELOPMENT OF PERIARTERITIS NODOSA A PROTRACTED COURSE OF THE PROCESS OR EVEN SPONTANEOUS REMISSIONS OF THE DISEASE MAY TAKE PLACE. FACILITY: KAFEDRA TERAPII FAKUL'TETA USOVERSHENSTVOVANIYA VRACHEY. FACILITY: RIZHSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

Microbiology

USSR

UDC 576.851.555.097.29.093.31

ISPOLATOVSKAYA, M. V., TOKINOVA, T. N., CHERIKOVSKAYA, YE. N., and BORISHPOLETS, Z. I., Laboratory of the Biochemistry of the Metabolism of Pathogenic Microbes, Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Moscow

"Neuramidase in the Cells and Toxins of *Cl. Perfringens*"

Moscow, Voprosy Meditsinskoy Khimii, Vol 19, No 1, Jan/Feb 73, pp 49-54

Abstract: Neuramidase is present in the cells and toxins of synchronous cultures of *Cl. perfringens*. Low toxicity strains have a more active cellular neuraminidase, while high toxicity strains have a more active extracellular neuraminidase. The peak activity of cellular neuraminidase occurs with 3-5 hrs of cell growth, while the activity of extracellular neuraminidase reaches its maximum after 9-12 hrs of cell growth and remains at this level for at least 24 hrs. The latter has an optimum pH of 4-5 and a high immunogenic activity, and it is 50% inactivated by heating at 60°C for 1 hr. The cellular neuraminidase has an optimum pH of 5-9, cannot be neutralized with antitoxin serum, and is thermostable. Both neuraminidases are equally resistant to EDTA and cysteine and sensitive to salts of heavy metals, urea, ethylenechlorhydrin, sodium dodecylsulphate, and polyanions. Both pass through Sephadex filters at the same rate.

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1/2 021 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--NEW SILICATE LAMINATED SAFETY GLASSES -U-  
AUTHOR--CHERINSKIY, B.Z., GUSHCHINA, G.I. C  
COUNTRY OF INFO--USSR  
SOURCE--STEKLO KERAM. 1970, 27(1), 18-23  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--MATERIALS  
  
TOPIC TAGS--SILICATE, ACRYLIC ACID, PLASTICIZER, METHYL METHACRYLATE,  
SILICATE GLASS, ADHESIVE, THERMAL STABILITY, SAFETY GLASS, LAMINATED  
GLASS  
  
CONTROL MARKING--NO RESTRICTIONS  
  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1987/1219 STEP NO--UR/0072/70/027/001/0013/0023  
  
CIRC ACCESSION NO--AP0104585  
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104595

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SAFETY GLASS WAS MANUFED. FROM A TOUGHENED SILICATE GLASS AND A COPOLYMER (I) INTERLAYER (COMPOSED OF 57-67PERCENT ME METHACRYLATE, 1-3PERCENT ACRYLIC ACID (II) AND PLASTICIZED WITH 30-40PERCENT DI-BU PHTHALATE). THE SURFACE OF THE SILICATE GLASS WAS BEST MODIFIED WITH AN AQ. ALC. SOLN. OF AN STP POLYMER FILM. ADDN. OF II TO THE POLYMG. MIXT. INCREASED THE ADHESIVE STRENGTH OF THE I INTERLAYER TO 80-100 KG-CM PRIME2 AND PRESERVED ITS THERMAL STABILITY. THE OPERATING TEMP. RANGE OF THE SAFETY GLASS DEPENDED ON THE THICKNESS OF THE I LAYER.

UNCLASSIFIED



1/2 021 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--NEW SILICATE LAMINATED SAFETY GLASSES -U-

AUTHOR--CHERINSKIY, B.Z., GUSHCHINA, G.I.

COUNTRY OF INFO--USSR

SOURCE--STEKLO KERAM. 1970, 27(1), 18-23

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SILICATE, ACRYLIC ACID, PLASTICIZER, METHYL METHACRYLATE,  
SILICATE GLASS, ADHESIVE, THERMAL STABILITY, SAFETY GLASS, LAMINATED  
GLASS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1987/1219

STEP NO--UR/0072/70/027/001/0018/0023

CIRC ACCESSION NO--AP0104585

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104585

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SAFETY GLASS WAS MANUFD. FROM A TOUGHENED SILICATE GLASS AND A COPOLYMER (I) INTERLAYER (COMPOSED OF 57-67PERCENT ME METHACRYLATE, 1-3PERCENT ACRYLIC ACID (II) AND PLASTICIZED WITH 30-40PERCENT DI-BU PHTHALATE). THE SURFACE OF THE SILICATE GLASS WAS BEST MODIFIED WITH AN AQ. ALC. SOLN. OF AN STP POLYMER FILM. ADDN. OF II TO THE POLYMG. MIXT. INCREASED THE ADHESIVE STRENGTH OF THE I INTERLAYER TO 80-100 KG-CM PRIME2 AND PRESERVED ITS THERMAL STABILITY. THE OPERATING TEMP. RANGE OF THE SAFETY GLASS DEPENDED ON THE THICKNESS OF THE I LAYER.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--POLY, ETHYLENE OXIDE -U-

AUTHOR--(05)-CHERKANOV, S.P., TARNORUTSKIY, M.M., GREBENSHCHIKOVA, V.A.,  
ALTERGOT, E.V., KOLOSOVA, N.B.  
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,691  
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRATZY, TOVARNYE ZNAKI, 1970 47(9).  
DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLYMER, ETHYLENE OXIDE, CHEMICAL PATENT, CATALYTIC  
POLYMERIZATION, ORGANOALUMINUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3007/0855

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136289

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0136289

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLY(ETHYLENE OXIDE) IS PREPD. BY POLYMN. OF ETHYLENE OXIDE IN A CATALYST SYSTEM CONSISTING OF AN ORGANOALUMINUM COMPOUND., A CHELATING AGENT, AND H SUB2O. TO INCREASE THE MOL. WT. OF THE POLYMER FORMED, DIETHYLENE DIOXIDE OR ITS DERIVS. ARE USED AS COCATALYSTS. FACILITY: NOVOSIBIRSKIY FILIAL NAUCHNO-ISSLEDOVATEL'SKOGO INSTITUTA POLIMERIZATSIONNYKH PLASTMASS.

UNCLASSIFIED

Microbiology

USSR

UDC 576.851.55.097

CHERKAS, H. P., KALINICHENKO, M. F., BIRYUKOVA, S. V., and PIDHORNA, L. H.,  
~~Kharkov~~ Scientific Research Institute of Vaccines and Sera imeni I. I.  
Mechnikov

"Toxins and Toxoids of Clostridium perfringens"

Kiev, Mikrobiologicheskii Zhurnal, Vol 33, No 2, Mar/Apr 71, pp 173-175

Abstract: Several series of pancreatic, pepsin and acidic hydrolysates were prepared in an attempt to find a reproducible inexpensive culture medium for production of Clostridium perfringens toxin. It was determined experimentally that the best medium consisted of one part pancreatic hydrolysate, two parts acid hydrolysate diluted with distilled water to give 160-180% amine nitrogen and 1.5-2% peptone; pH of the medium -- 7.6-7.8. To simulate growth, 4% brewers yeast was added (amino nitrogen 400-500 mg-%). In such a medium after 5 hrs of incubation of Cl. perfringens at 37°C the pH dropped to 5.4-5.6 yielding material with toxin activity 400-600 MLD/ml. To obtain Cl. perfringens toxoid the culture liquid was filtered, formalin (0.3 and 0.2%) was added twice with an interval of 16-18 hrs. The deactivation of the culture medium lasted 7-14 days, the pH being kept at 7.2-7.4; it was then filtered, purified, and concentrated by the polyphosphate method in presence of sul-  
1/2

USSR

CHERKAS, H. P., et al., Mikrobiologicheskoy Zhurnal, Vol 33, No 2, Mar/Apr  
71, pp 173-175

furic acid and 0.35% of hexametaphosphate. The toxoid yield was 60-70%  
with specific activity of 200-350 EC/mg. The toxoids exhibited high immuno-  
genic activity in experiments with white mice.

2/2

- 13 -

Cardiovascular Diseases

USSR

UDC 616.12-089.843-07:616.12-008.921.8

CHERKASHCHENKO, L. N., Laboratories of Experimental Surgery, Artificial Blood Circulation, and Biochemistry, Institute of Surgery imeni A. V. Vishnevskiy, Academy of Medical Sciences USSR, Moscow

"High Energy Phosphorus Compounds in the Myocardium of Isolated and Transplanted Dog Heart"

Moscow, Eksperimental'naya Khirurgiya i Anesteziologiya, No 5, Sep/Oct 70, pp 18-20

Abstract: Changes in the content of adenosinetriphosphate (ATP), creatine phosphate (CP), and inorganic phosphorus (IP) were studied in the tissue of the left and right heart ventricles, using dogs as the experimental animals. Tests were conducted after extracorporeal heart storage for 3 hours using continuous normo-thermal perfusion with oxygenated blood, after anoxic heart arrest for 2 hours at 37°C, after heart arrest for 1 hour followed by perfusion for 1 hour, and immediately after orthotropic transplantation. After extracorporeal storage for 3 hours, no differences were noted between the experimental and control data except for slightly lower CP in the right ventricle. After anoxic heart arrest for 2 hours, a sharp drop in CP and accumulation of IP were noted, and ATP was lower in some cases. After heart arrest followed by perfusion, only an increase in ATP level was noted. No changes were manifested immediately after orthotropic transplantation.

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# TECHNOLOGY OF PRODUCING NEW MATERIALS

Translation of Russian-language collection: Tekhnologiya  
polucheniya novykh materialov, 1972, Kiev.

JPRS 59873  
23 August 1973

23

## CONTENTS

	PAGE
Emissivity of zirconium and niobium carbides in the region of homogeneity (L.N. Okhrenchuk, G. Sh. Upadkhaya).....	1
Work Function of Silicon Carbide (L.N. Okhrenchuk).....	4
Electrical Resistance of Composite Materials (Ye. M. Petryva).....	8
Heat Capacity Measurement in Some Ceramic Materials (D.M. Karpinos, V.S. Klimenko).....	14
Thermal Conductivity of Reinforced Plastics (D.N. Karpinos, V.S. Klimenko).....	18
One Optimum Case of a Method of Axial Thermal Flow for Determining the Coefficient of Thermal Conductivity (V.S. Klimenko, et al.).....	21
Study of Sintering Kinetics by Hot Extrusion of Zirconium and Titanium Carbides in the Regions of Their Homogeneity (V. Ya. Naumenko, R. Ya. Petlykina).....	25
Hot Pressing Features of Molybdenum Carbide (Yu. I. Rogovoy, M.S. Koval'chenko).....	32

- 2 -

[1 - USSR - 1]



*Technology of Refractory Materials*

58425 59873

23 677 73

Page

14

CONTENTS (continued)

Production of Silicon Carbide Parts by Hot Casting  
(G.V. Itunov)..... 31

Production of Highly Dispersed Copper-Phase Powder Composites  
Containing Refractory-Metal Carbides  
(V.I. Motyazhev)..... 42

Production of Yttrium Subgroup Rare-Earth Metal  
Dodecaborides  
(V.V. Odintsov)..... 46

Sintering Titanium Diboride-Molybdenum Compacts  
(O.V. Zaverukha)..... 53

Removal of the Plasticizer from Die-Extruded Hard-Alloy Parts  
(G. V. Plyushch)..... 59

Study of Solid-Phase Interaction of Molybdenum and  
Tungsten Disilicides with Ti and Zr in an Electron-Beam  
Heater  
(O.S. Yurchenko)..... 66

Effect of Alloying Elements on Shift of the Alpha-Beta-  
Transformation in Titanium and Zirconium  
(S.M. Braun)..... 71

Study of Some Properties of Zirconium with Additions of  
Transition Metals  
(V.F. Filippov)..... 75

Rare-Earth Metal Modification of Titanium  
(V.A. Kashchuk, A.I. Cherkashin)..... 84

Increasing the Physical and Mechanical Properties of Cermets  
(P.I. Chaplygin)..... 89

Effect of Scandium, Yttrium, and Lanthanum Oxides on the  
Properties of Nickel Ferrite  
(L.A. Alekseyuk)..... 95

Interaction of Transition Metal Carbides with Silicon  
(E.V. Kulyshneva)..... 100

Fractionation of Fine Metallic Powders  
(A.P. Shapoval)..... 106

- b -



USSR

UDC 612.821.2

CHERKASHIN, A. N., and AZARASHVILI, A. A., Laboratory of the Physiological and Physico-Chemical Basis of Memory, Institute of Biophysics, Academy of Sciences USSR, Pushchino-na-Oke

"Pharmacological Investigation of Memory"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. N. Pavlova, Vol 22, No 3, May/Jun 72, pp 504-509

Abstract: Administration of RNA-ase into the cerebral ventricles of rats induces a dissociated state during which a previously learned conditioned reflex is absent but spontaneously reappears on the next day, even when an opposite conditioned reflex is developed during the action of the RNA-ase. This is the nonspecific effect of RNA-ase which is also exerted by a large number of other drugs. A new conditioned reflex can be developed during the action of RNA-ase. However, this reflex is no longer manifested on the next day either in the normal state or after repeated injections of RNA-ase: each time it must be learned anew. This is the specific effect of RNA-ase, which prevents consolidation of the memory trace or the transformation of short-term memory into long-term. During evaluation of the specific effect of any agent, it is necessary to consider the mechanism of "dissociated learning."

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- 34 -

USSR

UDC 539.4:624

KONOVODCHENKO, V. I., CHERKASHIN, A. V.

"Study of the Operation of Elements of Walls of Large-Block Buildings Under the Action of a Horizontal Load"

V sb. Vses. soveshch. "Proyektir. i str-vo seismostoyk. zdaniy i sooruzh", 1971 (All-Union Conference "Design and Construction of Earthquake-Proof Buildings and Structures," 1971 -- Collection of Works), Moscow, 1971, pp 94-97 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3V1217)

Translation: Preliminary results are presented on actual static tests of the partitions of four-story buildings in Yalta that were made of large blocks of cut limestone. The partitions were loaded with a horizontal force in the plane of the building in the upper level. The displacement of the partitions was determined at four points along the height. Graphs of the displacement are given as a function of the level of stresses for two partitions located on the first and second stories of the building. It is pointed out that complete processing and analysis of the results is still incomplete and final results will be published later. A. S. Arkhipov.

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USSR

UDC: 681.3.06:51

CHERKASHIN, F. A.

"Basic Position of the Binary Calculus System With Artificial Order of Weights"

Kiev, V sb. Tsifr. vychisl. mashiny (Digital Computers--collection of works) 1972, pp 43-56 (from RZh--Avtomatika, telemekhanika i vychislitel'naya tekhnika, No 12, 1973, Abstract No 12B78)

Translation: The so-called binary systems of calculus with artificial order of weights (CAOW<sub>2</sub>) are examined. The translation of decimal numbers into CAOW<sub>2</sub> is described, the representation of negative numbers is shown, and auxiliary and inverse codes, along with fundamental arithmetic and logic operations, are given. E. G.

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USSR

UDC 616.981.136-092.9-092-02:613.166.9

CHERKASHIN, G. V., and LASINSKAYE, A. B., Altayskiy Medical Institute

"Effect of Cold Stress on Some Nonspecific Factors of Immunobiological Reactivity and Sensitivity of Mice to Listeria"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 2, 1973, pp 33-36

Abstract: Mice were maintained 6 hours to 5 days at 3°C to determine effects of cold stress on immunobiological reactivity. Reactions followed an adaptive pattern, with an initial reduction (by over half) of leukocyte count, thymus-body weight ratio, and lysozyme and leukocyte phagocytic activity in the first stage (2 days), followed in the second stage (after 3 days) by recovery and some overshooting over control levels for these indexes. Subsequently LD<sub>50</sub> determinations were made 10 days after mice first began a 3-day exposure to 3°C. Animals were infected with Listeria strain 14/57, serotype I after 12-72 hours of exposure. The LD<sub>50</sub> decreased considerably (from 7 million in controls to 1.5-0.5 million) in the 1st day after infection, while resistance began to be restored from the 2d-3d days on. The correlation between thymus size and immunological activity changes implicates desoxycorticosterone production as the dominant factor in depression and recovery of immunological activity.

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1/2 024 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--INCREASE IN THE PHOTOELECTRIC SENSITIVITY OF POLYMERS WITH A  
CONJUGATION SYSTEM. I. PHOTSENSITIVITY OF A POLYMERLOW MOLECULAR  
AUTHOR--(05)-DRABKIN, I.A., TSARYUK, V.I., CHERKASHIN, M.I., CHAUSER, M.G.,  
KISILITSA, P.P.  
COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(1), 65-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--CONJUGATED POLYMER, MOLECULAR WEIGHT, PLASTIC FILM,  
PHOTSENSITIVITY, BENZENE DERIVATIVE, ACETYLENE, IODINATED ORGANIC  
COMPOUND, CHLORINATED ORGANIC COMPOUND, ORGANIC AZINE COMPOUND,  
PROTON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FAME--1984/1814

STEP NO--UR/0364/70/006/001/0065/0069

CIRC ACCESSION NO--AP0100388

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100388

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE ADDN. OF LOW MOL. WT. PHOTON ACCEPTORS (BROMANIL, CHLORANIL, TETRACYANOQUINODIMETHAN, TETRACYANOETHYLENE, TETRACYANOBENZENE, ALCL SUB3, OR PHTHALIC ANHYDRIDE) TO CONJUGATED POLYMERS (POLY(PHENYLACETYLENE), POLY(BETA IODOPHENYLACETYLENE), POLY(DIPHENYLBUTADIYNE), POLY(1 CHLOROCYCLOPENTENE), OR POLYAZINE) INCREASED THE PHOTO COND. (SIGMA) OF THE POLYMERS LESSTHANOREQUALTOIOPRIMES TIMES. THERE IS AN INCREASE OF SIGMA WITH THE POLYMER FILM THICKNESS, BUT NOT WITH INCREASED LAYER THICKNESS OF THE ACCEPTOR. THE MOST IMPORTANT FACTOR IN CHANGING SIGMA IS THE TYPE OF THE ACCEPTOR POLYMER INTERFACE. THE ADDN. OF THE ACCEPTORS ALSO INCREASES THE DARK COND. OF THE POLYMERS SLIGHTLY.

UNCLASSIFIED



USSR

UDC: 669.295.5:536.777

RUBTSOV, A. N., OLESOV, Yu. G., CHERKASHIN, V. I., and SUCHKOV, A. B., Zaporozhe

"Activity of Aluminum, Vanadium, and Chromium in Binary Titanium Alloys"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, no 6, Nov-Dec 70, pp 84-87

Abstract: Use was made of the electromotive force method to study the activities of aluminum, vanadium, and chromium as a function of temperature and the content of the alloying metal in Ti-Al, Ti-V, and Ti-Cr alloys. The activities of the three metals were determined in alloys not subjected to preliminary hydrogenation-dehydrogenation. The activity of titanium was determined in the same alloys subjected to the preliminary hydrogenation-dehydrogenation. It is noted that the rise in titanium activity in the hydrogenated alloy is related to the bond rupture between the atoms of titanium and those of the alloying metal. This permits separation of some components of titanium alloys from titanium by the use of hydrogenation and subsequent hydrometallurgical treatment as well as by hydrogenation and (after degassing) electrolytic refining. A table in the original article shows the concentration dependences of titanium activity in Ti-Al, Ti-V,

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USSR

RUBTSOV, A. N., et al, Izvestiya Akademii Nauk SSSR, Metally, no 6, Nov-Dec  
70, pp 84-87

and Ti-Cr alloys (for 800°C) subjected to preliminary hydrogenation-  
dehydrogenation.

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USSR

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UDC: 621.762.274:669.295.5'71

OLESOV, YU.G., MEYERSON, G.A., USTINOV, V.S., ZAPADNYA, V.I., SINYAYEVA, N.P., and  
CHERKASHIN, V.I.

"Electrolytic Derivation of Titanium-Based Alloy Powders"

Moscow, Tsvetnyye Metally, No 5, May 70, pp 79-81

Abstract: Investigations were made of the possibility of obtaining titanium-alloy powders by electrolysis of melts with a soluble anode. Titanium-aluminum alloys were used as examples. The first experiments were conducted on a large laboratory electrolyzer (current up to 300 amps). A mixture of A5-aluminum and ChM-titanium sponge wastes was used as the anode material. Aluminum content in the charge was varied from 10 to 40%. The cathodic deposits were processed by a hydrometallurgical method, separated into four fractions: +0.56, -0.56 + 0.14, -0.14 + 0.07 and -0.07 mm, and analyzed for Al, Fe, Si, C, N, and O content. On the basis literature data and the investigations conducted, optimum conditions were determined: anode current density of 0.1-0.15 amp/cm<sup>2</sup>, cathode current density of 0.8-1 amp/cm<sup>2</sup>, and electrolyte composed of 40% MgCl<sub>2</sub>, 35% KCl, and 25% NaCl containing 1-1.5% dissolved titanium in the form of lower chlorides. Subsequent investigations were conducted under plant conditions. After hydrometallurgical processing and drying, the cathode material was separated into +0.5, -0.5 + 0.08, and -0.08 mm fractions. It was established that with a rise in the aluminum

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USSR

OLESOV, YU.G., et al, Tsvetnyye Metally, No 5, May 70, pp 79-81

content in the starting material, the yield of fine particles grows. As a result of the experiments conducted, the basic technological parameters of obtaining titanium-aluminum powders in existing electrolyzers were determined: cell current of 3-3.5 kiloamperes, anode current density of 0.2-0.25 amp/cm<sup>2</sup>, 1-1.5% soluble titanium concentration in an MgCl<sub>2</sub> -- KCl -- NaCl -- TiCl<sub>x</sub> electrolyte, working temperature of the melt at 550-580°C, and unit electrolysis time at 2-3 hours. These parameters ensure a stable current efficiency of 0.45-0.50 g/amp·hr and an 80-85% yield of metal powder fractions after disintegration. The data obtained from the experiments indicate that by electrolysis of melts with a soluble anode, it is possible to obtain powders from titanium-aluminum alloys of determined composition which possess adequately high mechanical properties in the baked state.

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USSR

UDC 669.295.002.68

RUBTSOV, A. N., OLESOV, Yu. G., CHERKASHIN, V. I., ANTONOVA, M. M., and  
LISKOVICH, V. A.

"New Methods of Reprocessing Titanium Material Wastes"

Moscow, Tsvetnyye Metally, No 5, May 70, pp 60-62

Abstract: Two new laboratory methods of reprocessing wastes from titanium production are described and evaluated. The first method involves electrolytic refining of dehydrated titanium alloys, and the second, hydrometallurgical separation of hydrated components of titanium alloys. Titanium alloy powders of a given chemical composition were produced by hydrogenation. The expediency of producing hard refractory compounds (carbides, nitrides, borides, etc.) from titanium and its alloys wastes is stressed. The new methods are undergoing further testing.

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- 60 -

1/2 040 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--THERMOCHEMICAL INVESTIGATION OF A CHANGE IN THE ENTHALPY OF  
TITANIUM DURING ITS TRANSITION INTO THE DEHYDROGENATED STATE -U-  
AUTHOR-(03)-RUBTSOV, A.N., OLESOV, YU.G., CHERKASHIN, V.I.  
COUNTRY OF INFO--USSR  
SOURCE--POROSH. MET. 1970, 10(3), 11-15  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS, CHEMISTRY  
TOPIC TAGS--ENTHALPY, TITANIUM, THERMOCHEMISTRY, HYDRIDE, ELECTRON  
MICROSCOPY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1999/1096 STEP NO--UR/0226/70/010/003/0011/0015  
CIRC ACCESSION NO--AP0123088

UNCLASSIFIED

2/4 040

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123088

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. D., ENTHALPY CHANGES ( $\Delta H$ ), AND SP. SURFACE WERE STUDIED EXPTL. DURING THE REACTION  $Ti + XH$  FORMS AND IS FORMED FROM  $TiH_{SUB}X$  AT  $X$  EQUALS 0-1.8. THE  $\Delta H$  WAS MINUS 10 KCAL-G ATOM FROM HEAT CHANGES DURING DISSOLVING SAMPLES IN 28 WT. PERCENT HCL AT 46DEGREES. DEHYDROGENATED SAMPLES WERE OBTAINED BY DEGASSING  $TiH_{SUB}X$  AT 750DEGREES AND 10 PRIME NEGATIVE2 TORR, DECREASING PRESSURE TO 0.5 TIMES 10 PRIME NEGATIVE4 TORR, AND COOLING TO 0DEGREES. SAMPLES THUS OBTAINED HAD THE SAME D. AS THE ORIGINAL ONES OWING TO THE PRESENCE OF VACANCIES IN THE METAL LATTICE. BY ASSUMING A RANDOM DISTRIBUTION OF VACANCIES OF THE AT. SIZE IN THE LATTICE, AN EXPRESSION FOR CHANGES IN THE GIBBS FREE ENERGY WAS DEDUCED. THE SP. SURFACE INCREASES WITH INCREASE IN  $X$  AND IT REMAINS THE SAME AFTER THE SUBSEQUENT DEGASSING. ELECTRON MICROPHOTOGRAPHS CONFIRMED THE VACANCY MECHANISM OF THE FORMATION OF MACROPORES DURING THE DEHYDROGENATION.

FACILITY: DMEPR. TITANO-MAGNIVYI ZAVOD, USSR.

UNCLASSIFIED

USSR

UDC 621.762.27

RUBTSOV, A. N., OLESOV, Yu. G., USTINOV, V. S., KISELEV, O. G., CHERKASHIN, V. I., and GLUKHOV, V. P., Dnepr Titanium-Magnesium Plant

"Production of Powders of Titanium Alloys and Refractory Titanium-Based Compounds From Titanium Alloy Waste"

Kiev, Poroshkovaya Metallurgiya, No 12, Dec 70, pp 18-23

Abstract: The method of electrolytic refining of titanium wastes can be used to produce high-quality titanium powder for further production use. Studies have established the following optimal electrolysis mode: anode and cathode current density 0.2-0.3 and 2.6-2.8 a/cm<sup>2</sup> respectively; temperature 870-890°C; cathode precipitate growth time 0.5-1 hr; titanium concentration in electrolyte 0.5-0.7%. The authors studied the production of electrolytic titanium powders from titanium sponge waste under near-optimal conditions. The quality of the electrolytic titanium powder was higher than that produced by hydride calcium thermal methods. Dehydrogenated powders of VT5 and VT6 alloys were produced, corresponding to the initial alloys in chemical composition.

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- 54 -



Electromagnetic Wave Propagation

- USSR

UDC: 621.371.332.3(21)

SOKOLOVSKIY, V. I., CHERKASHIN, Yu. N., Editorial Staff of "Radiotekhnika i Elektronika", AN SSSR

"Using the Method of Frequency Averaging for Scattering Surfaces With Large-Scale Irregularities"

Moscow, *Primeneniye metoda usredneniya po chastote dlya rasseivayushchikh poverkhnostey s krupnomasshtabnymi nerovnostyami* (cf. English above), 1972, 10 pp, bibl. 4 titles (manuscript deposited at VINITI, No 4704-72 Dep. from 15 Aug 72) (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12A299DEP by the authors)

Translation: The authors consider scattering by surfaces with large-scale irregularities where the Kirchhoff method is applicable to calculation of the scattered field. The scattered field is observed in the Fraunhofer zone with respect to the dimensions of the scattering surface. It is assumed that surface irregularities are in a state of rest. An investigation is made of an estimate of the average intensity of the scattered field of fixed frequency obtained by averaging the intensity in some frequency range. Based on the requirements of smallness of the estimate error due to frequency nonuniformity of the process, the spectrum of the working  
1/2

USSR

SOKOLOVSKIY, V. I., CHERKASHIN, Yu. N., *Primeneniye metoda usredneniya po chastote dlya rasseivayushchikh poverkhnostey s krupnomasshtabnymi nerovnostyami*, Moscow, 1972

frequencies irradiating the surface is determined and also the averaging interval. The estimate thus introduced is unbiased, and its variance is a relatively small quantity. for cases with different relations between size, inclinations and height of the surface, the authors calculate the relative mean square fluctuations of intensity averaged in the frequency range, and compute the radii of the frequency correlation of intensities.

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- 14 -

USSR

UDC 621.371.334

LUKIN, A. A. and CHERKASHIN, Yu. N.

"Diffraction of Pulses of Various Shapes by Screens (in the Uniform Ionosphere) and in the Nonuniform Ionosphere"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 1 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 1--collection of works) "Nauka," 1972 pp 342-346 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A332)

Translation: Two equally correct methods are presented of computing the distortion in the shape of the envelope signal in problems of dispersion by a screen and propagation in nonuniform dispersive media: the Adamar-Klein method, based on solutions of the Maxwell equations in the form of series, and the Fourier transform method. The Adamar-Klein method is definitely universal. Bibliography of five. A. L.

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- 35 -

USSR

UDC 621.371.332.4

SOKOLOVSKIY, V. I. and CHERKASHINA, L. N.

"Method of Frequency Averaging in Problems of Wave Scattering in Media With Random Heterogeneities"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 5 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 5--collection of works) "Nauka," 1972, pp 197-201 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A381)

Translation: A method is given for solving the problem of scattering in media with random nonuniformities, based on frequency averaging of the quantity investigated (the intensity of the scattered field, for example). The expression thus obtained is applied to an investigation of the space waves in the ionosphere as well as to scattering in a medium with volume heterogeneities and on a statistically uneven surface. Bibliography of four

1/1

- 53 -

USSR

UDC 669.15.018.8

BABKOV, A. A., and CHERKASHINA, N. P.

"Effect of Hot Plastic Deformation on Structure and Mechanical Properties of Kh21N5T Steel"

Sb. tr. TsNII chern. metallurgii (Collection of Works of Central Scientific Research Institute of Ferrous Metallurgy), 1970, vyp. 77, pp 108-112 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3I586 by authors)

Translation: The authors studied the mechanical properties of as-cast and as-deformed Kh21N5T steel (14.7-ton ingot, slab, and thin sheet), and made a chemical analysis of alpha and gamma phases on a microanalyzer of the CAMECA Company during ingot conversion to sheet. No dendritic segregation of chemical elements is observed in the metal of ingot, slabs, or sheet. One illustration. Two tables. Bibliography with four titles.

1/1

- 11 -

USSR

UDC 621.77.016.02:669.14.018.8

BABAKOV, A. A., and CHERKASHINA, N. P.

"Influence of Hot Plastic Deformation on Structure and Mechanical Properties of Kh21NST Steel"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 108-112

Translation: The results are presented from a study of the mechanical properties of Kh21NST steel in the cast and deformed states (14.7 T ingot, slab, and thin sheet), and chemical analysis of the  $\alpha$  and  $\gamma$  phases is performed using a micro-analyzer of the "SAMSA" Company during the process of conversion of ingot to sheet.

Dendritic liquation of the chemical elements in the metal of the ingot, slab, and sheets was not observed. 1 figure; 2 tables; 4 biblio. refs.

1/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--PREPARATION OF RANEY SILVER FROM A SILVER CALCIUM ALLOY -U-  
AUTHOR--(04)-LEBEDEVA, YE.N., KARONIK, V.V., CHERKASHINA, N.V., KAGAN, N.M.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 763-7 C  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--METAL CATALYST, SILVER, ETHYLENE, OXIDATION, ETHYLENE OXIDE,  
SILVER ALLOY, CALCIUM ALLOY, PHASE ANALYSIS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3004/0968 STEP NO--UR/0080/70/043/004/0763/0767  
CIRC ACCESSION NO--AP0131553  
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0131553

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A AG-CA (RANEY AG) ALLOY, USED AS A CATALYST IN OXIDN.-REDN. REACTIONS SUCH AS THE CONVERSION OF ETHYLENE TO ETHYLENE OXIDE, WAS PREPD. BY ALLOYING THE COMPONENTS IN AN OPEN CRUCIBLE IN AN AR ATM. THE ALLOY CONTAINED 40 AT. PERCENT CA IN THE CHARGE, AND SOMEWHAT LESS IN THE PRODUCT. PHASE ANAL. OF THE ALLOY SHOWED THE PRESENCE OF THE PHASES AGCA, AG,CA, AG, AND CAO. DIFFRACTION DATA ARE GIVEN FOR ALLOY OXIDN. IN AIR AT 100-600DEGREES, AND IN WATER VAPOR AT 200-500DEGREES.

UNCLASSIFIED



USSR

UDC 614.866:546.841

CHERKASHINA, T. N., PAVLOVSKAYA, N. A., and MOISEYTSEV, P. I.

"Deactivation of Surfaces Contaminated With Isotopes of Thorium and Its Disintegration Products"

Moscow, Gigiyena i Sanitariya, No 10, Oct 1970, pp 33-37

Abstract: Samples of material contaminated with a  $\text{Th}^{228}\text{Cl}_4$  solution in equilibrium with disintegration products ( $3 \cdot 10^{-3}$  microcurie/mg) with a  $\text{Th}^{232}$  carrier (18 mg/ml) were dried for 18-25 hours at room temperature and the activity measured. The samples were then deactivated by various strong detergents (alkyl sulfonate, GIPKh-200, proxanol-224, and SP 333-60), and the remaining activity was determined at various intervals after deactivation. The degree of contamination was established by the prevailing levels of alpha- and gamma-activity. The short-lived lead-212 isotope was most stably absorbed. The long-lived  $\text{Th}^{228}$  and  $\text{Ra}^{224}$  isotopes were much more readily removed from the test surfaces. Porous surfaces such as linoleum and ceramic tile retained both the short- and long-lived isotopes.

1/1

- 25 -

USSR

UDC 681.3.06:51

BOTOVA, R. F., YEZHQYA, E. A., ZALIZNYAK, M. A., RODINOVA, L. A., CHERKASHNEVA, K.

"Translator for the "ARAGATs" Computer"

Uch. Zap. Perm. Un-t, [Scientific Writings of Perm' University], 1970, No 220, pp 149-160, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V642, unsigned).

Translation: The translator for the "ARAGATs" computer is based on the TA-1 translator for the M-20 computer. The input language is ALGOL-60 with some limitations.

1/1

USSR

UDC 621.791.856

ABRALOV, M. A., UMAROV, B. V., SOTNIKOV, E. A., CHERKASOV

"Microplasma Welding of Envelopes of Type Kh18N10T Steel"

Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Tekhnicheskikh Nauk, No 5, 1971, pp 26-28.

ABSTRACT: Workers at the Tashkent Polytechnical Institute have developed a method of microplasma welding of Kh18N10T steel envelopes (wall thickness 0.3 mm, length 450 mm, diameter 60-120 mm), designed to replace argon-arc welding. The plasma is produced in the shape of a needle, and can thus weld a narrow seam. The microplasma can be extended to 8-9 mm in length with currents of 10 a. Since the arc is insensitive to changes in its length, the welding process is more stable, seam quality is improved and the welding rate increases. Welding is performed using direct current from a A-1255 power supply. Metallographic studies have shown that microplasma welding by this method produces seams with finer grain structure than with argon arc welding. The microplasma welding method can also be used for correction of defects such as cracks and pores.

1/1

CHERKASOV, A.

Engineer/  
Mathematician

SO: FOREIGN PRESS

DIGEST FAD 0029/71

AUGUST 71

53. USSR

ULITSKIY, Ye., Chief of the Safety Measures Laboratory of the All-Union Institute for the Mechanization of Agriculture, Candidate of Technical Sciences; CHERKASOV, A., Engineer-Mathematician

"Electronic Computer and Analysis of Industrial Injuries"

Moscow, Okhrana Truda i Sotsial'noye Strakhovaniye, No 3, Mar 71, pp 30-31

Abstract: Current methods of gathering industrial injuries information are obsolete. Effective solution of safety problems requires clear presentation of current distribution of industrial hazards. A pilot program was initiated in the agricultural industry of the Latvian SSR to gather industrial accident information and to take advantage of modern data communication and processing techniques. Operationally, such information is collected and processed by the Industrial Safety Service. New methods of information processing and analysis have been selected; time lapse between the accidents and the determination of their causes has been almost eliminated, allowing for a continuous control of effectiveness of preventive measures. Initial information is entered on form N-1: it is coded according to a code table and transmitted to a computer center for storage. Thus, a massive data bank of continuously updated information is formed on complete histories of accidents. Subsequently, this

1/2

31 Aug 71

79

PPD:CYBERNETICS

USSR

ULITSKIY, Ye., CHERKASOV, A., Okhrana Truda i Sotsial'noye Strakhovaniye, No 3,  
Mar 71, pp 30-31

information is systematized, processed according to analytical programs, and distributed to subscribers. In the future, additional information will be stored to aid the development of accident prevention methods. Areas for improvement will not be limited to automated analysis but will include refinement of the coding table and increase in its information capacity. Early experience with the pilot program of mechanized analysis has resulted in singling out a large number of industrial hazards and more than seventy proposals and recommendations aimed at accident prevention.

USSR

UDC 62-977:669.15-194.3

CHERKASOV, A. A., KUZ'MINSKAYA, L. N., and BERNSHTEYN, M. L.

"Properties of 23Kh12NVMFA (EP65) Steel After High-Temperature Thermo-mechanical Working"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 9, 1970, pp 29-33

Abstract: A study was made of the influence of the parameters of high-temperature thermomechanical working on the properties of EP65 electric-slag steel. The chemical composition of the steel is: 0.24% C, 0.41% Mn, 0.28% Si, 0.013% P, 0.006% S, 13.1% Cr, 2.22% Ni, 0.60% Mo, 1.90% W, and 0.46% V. The influence of deformation temperature on properties was studied at 1050-1200°C with 70% deformation in three passes. The results show that the strength properties of EP 65 are higher by 25-30 kg/mm<sup>2</sup> than after ordinary heat treatment, while the plasticity is also higher, allowing tempering to be performed at a lower temperature. High-temperature thermomechanical treatment increases plasticity and viscosity, and also provides high crack propagation resistance with low anisotropy of mechanical properties. Increasing the deformation temperature over  
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USSR

CHERKASOV, A. A., et al, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 9, 1970, pp 29-33

1100-1150°C decreases the strength of the steel, due to development of recrystallization. The hardened state produced is stable and is retained with tempering temperatures up to 550°C. Recrystallization at 850°C is slow, probably because of the high degree of alloying of the steel.

2/2

- 57 -

USSR

UDC 621.397.62

CHERKASOV, A. L.

"Effect of Oscillations of the Feed Voltage on Geometric Distortions of the Television Raster"

Sb. nauchn. rabot. Zaachn. in-t sov. trgovli (Collected Scientific Works of the Trade Council Correspondence Institute), 1970, vyp. 2, pp 216-219 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8G165)

Translation: This article contains an investigation of the quality of a TV image on a television screen as a function of the stability of the feed voltage. The relation of the geometric dimensions of the test table elements was measured for various feed network voltages. As a result of inspecting more than 100 receivers it was established that the voltage oscillations affect the maximum brightness, contrast, dimensions and resolution and also the stability of scanning synchronization. There is one illustration and a three-entry bibliography.

1/1



USSR

UDC 615.371:576.851.49].036.8.074:541.24

MOSKVICHEVA, I. V., DUDKINA, M. I., ZUYEV, A. S., CHERKASOV, A. N., and SHAPIRO, N. I., Leningrad Institute of Vaccines and Sera

"Relationship Between the Immunological Properties of *S. typhi* Antigen Fractions and Their Molecular-Weight Parameters

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1972, pp 82-86

Abstract: Antigens isolated from *S. typhi* cultures by tryptic proteolysis or by treatment with hydrogen peroxide were characterized by considerable polydispersity. They contained components with diffusion coefficients ranging from  $0.45 - 0.6 \times 10^{-7}$  to  $10 - 11 \times 10^{-7}$  cm<sup>2</sup>/sec with mean square radii  $[(R_g^2)/2]$  from 560 - 590 to 30 - 40 Å. The high-molecular-weight fractions of the preparations induced the formation of O and Vi antibodies in high titers; the antigen activity of the low-molecular-weight fractions was 2 to 3 orders lower. The high-molecular-weight fraction of the peroxide preparation also induced the formation of H antibodies. A relationship was observed between the molecular-weight parameters of the antigen preparations and the level of their biological activity (protective properties, toxicity, and antigenic specificity). The high-molecular-weight components exhibited the greatest biological activity in rabbit serum.

1/1

USSR

UDC 621.315.592

NESMELOVA, I. M., BARYSHEV, N. S., VOLKOVA, F. P., CHERKASOV, A. P.

"Reflection Spectra of Single Crystals of  $\text{Cd}_{1-x}\text{Hg}_x\text{Te}$  Solid Solutions"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 950-951

Abstract: A study was made of the reflection spectra of  $\text{Cd}_{1-x}\text{Hg}_x\text{Te}$  single crystals as a function of the electron concentration  $n_0$  and the cadmium telluride content at room temperature. The studies were performed on n-type single crystals grown by the vertical zone refining method. The electron concentration varied from  $10^{15}$  to  $10^{18} \text{ cm}^{-3}$ , and samples were studied with a composition of  $x = 0.17-0.48$ . For specimens with an electron concentration of less than  $10^{17} \text{ cm}^{-3}$ , the reflection coefficient for fixed wave lengths increases with a decrease in the cadmium telluride content in the solid solution. Thus, the index of refraction increases with a decrease in  $x$ . Obvious plasma minima were observed in the reflection spectra of the specimens with  $n_0 = 5 \cdot 10^{17} - 2 \cdot 10^{18} \text{ cm}^{-3}$ , by the position and magnitude of which the effective electron masses were calculated. The tabulated data include the values of the effective masses of the electrons calculated by Kane [Kane] theory. We experimentally obtained values of  $m_n/m_0$  agreeing with the values calculated by Kane theory.

1/1

- 240 -

1/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--EFFECT OF A COMPENSATING IMPURITY ON THE HOMOGENEITY OF MERCURY  
DOPED GERMANIUM -U-  
AUTHOR--(04)-GUZHOVA, I.P., ROMANVCHEV, D.A., CHERKASOV, A.P.,  
KHARIONOVSKIY, YU.S.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 196-200  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--GERMANIUM SINGLE CRYSTAL, SEMICONDUCTOR IMPURITY, RESISTIVITY,  
PARTICLE DISTRIBUTION, MERCURY, ANTIMONY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1987/2000 STEP NO--UR/0363/70/006/002/0196/0200  
CIRC ACCESSION NO--AP0105074  
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105074

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HOMOGENEITY OF RESISTIVITY AND IMPURITY CONC. IN THE TRANSVERSE CROSS SECTION OF GE SINGLE CRYSTALS DOPED WITH HG, PARTIALLY COMPENSATED WITH SB WITH A HG LEVEL OF 0.087 EV WAS INVESTIGATED. THE PRIMARY REASON FOR THE HETEROGENEITY OF THE RESISTIVITY IN THE TRANSVERSE CROSS SECTION OF THE CRYSTALS CONSISTS IN NONUNIFORM DISTRIBUTION OF THE SB DUE TO THE DEVELOPMENT OF THE BOUNDARY EFFECT. THE HG IS DISTRIBUTED UNIFORMLY IN THE TRANSVERSE CROSS SECTION OF THE CRYSTALS, AND THE BOUNDARY EFFECT FOR HG AT A CONC. OF SIMILAR TO 5 TIMES 10 PRIME14-CM PRIME3 WAS NOT OBSD. THE EFFECT OF HETEROGENEITY OF THE SB ON THE HETEROGENEITY OF THE ELEC. PROPERTIES OF THE CRYSTALS DEPENDS ON THE DEGREE OF CONDENSATION. THE HETEROGENEITY OF THE CRYSTALS AT A LOW TEMP. CAN INCREASE TREMENDOUSLY DUE TO THE EFFECT OF RANDOM ACCEPTORS, IF THE CONC. OF THE LATTER IS CLOSE TO THE CONC. OF THE COMPENSATING IMPURITIES.

UNCLASSIFIED

USSR

UDC 621.173.535

ARISTOV, A. V., KUZIN, V. A., and CHERKASOV, A. S.

"Generation of Stimulated Radiation by Solutions of Anthracene Derivatives"

Leningrad, Optika i Spektroskopiya, Aug 73, pp 330-335

**Abstract:** An investigation was made of the relationship of the yield threshold of generation ( $I_{thr}$ ) to the yield-quantum of fluorescence ( $Y$ ) in toluol solutions of 27 anthracene derivatives. A sharp difference was found to exist. Generation was excited by the second harmonic of a ruby laser (energy 0.03 joules, pulse duration 20 nanoseconds) with the resonator in a transverse position (resonator base 5 cm, reflection of the mirrors 98%). It was established that the decrease of  $Y$  as a result of luminescence quenching (intramolecular, concentration, by oxygen) is accompanied by an approximately equal increase of  $I_{thr}$ , and when  $Y \approx 0.5$ , a cutoff of the generation is observed. This is explained by the origination of induced triplet-triplet absorption. Satisfactory agreement is shown between the experimental relationship of  $I_{thr}$  to  $Y$ , and a calculated relationship is derived under the assumption that the triplet molecules responsible for the induced absorption are formed with a yield-quantum of  $(1 - Y)$ . Two figures, one table, 11 references.

1/1

USSR

UDC 541.651+621.375.9

ARISTOV, A. V., VIKTOROVA, YE. N., MASLYUKOV, YU. S., REZNIKOVA, I. I., and CHERKASOV, A. S.

"Effect of Structure and Degree of Purity of Rhodamines on Their Oscillation Characteristics for Laser Pumping"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 19, No 2, 1973, pp 250-253

Abstract: The authors find that there has been no investigation of the relative oscillation efficiency of the different rhodamines or of the effect of the degree of purity of the rhodamine on its oscillation efficiency. The present paper therefore presents the results obtained in oscillation tests, under identical conditions, of eleven rhodamines of different structures. Part of these specimens are commercial products, the remainder were specially synthesized by known methods. A listing of the nomenclature of the various specimens and a table of their relative oscillation characteristics are given. The latter shows that the rhodamine's oscillation ability is a function of the purity of the material. Also shown is a curve for the oscillation energy as a function of the optical density of the rhodamine solutions. The testing method is explained.

1/1

1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--EFFECT OF WATER AND OXYGEN IN NONPOLAR SOLVENTS ON THE LUMINESCENCE  
PROPERTIES OF PHTHALIMIDE DERIVATIVES -U-  
AUTHOR--(04)--VESELOVA, T.V., REZNIKOVA, I.I., CHERKASOV, A.S., SHIROKOV,  
V.I.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 649-53  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, PHYSICS  
TOPIC TAGS--PHTHALIC ACID, IMIDE, FLUORESCENCE SPECTRUM, AMINE, SOLVENT  
ACTION, FLUORESCENCE QUENCHING  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3006/0949 STEP NO--UR/0048/70/034/003/0649/0653  
CIRC ACCESSION NO--AP0134669  
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0134669

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SIMILARLY TO PREVIOUS EXPTS. USING DEAERATED SOLNS. (V., R., C., AND S., 1968), ADDN. OF THE MAX. SOL. AMTS. OF WATER TO AIR CONTG. HEXANE AND PHME SOLNS. OF 4,AMINOPHTHALIMIDES RESULTED IN A SHIFT OF THE FLUORESCENCE SPECTRUM TOWARDS LONGER WAVELENGTHS AND AN INCREASED AMT. OF FLUOROMETRIC PHASE (CHARACTERIZING THE DURATION OF LUMINESCENCE) ACROSS THE SPECTRUM. THE SPECTRAL AND PHASE CHARACTERISTICS OF ANHYD., DEAERATED NEUTRAL SOLNS. OF 4,AMINO,N,METHYLPHTHALIMIDE (I), 4,AMINO,N,CYCLOHEXYLPHTHALIMIDE (II), 4,ANILINO,N,METHYLPHTHALIMIDE, 3,AMINO,N,METHYLPHTHALIMIDE, AND 3, (DIPHENYLAMINO),N,METHYLPHTHALIMIDE IN SEVERAL NON POLAR SOLVENTS ARE TABULATED. THE REMOVAL OF WATER AND O<sub>2</sub> FROM THE SOLNS. RESULTED IN A REVERSE SHIFT OF THE FLUORESCENCE SPECTRA TOWARDS SHORTER WAVELENGTHS; THUS, IN PHME AND ME SUB2 CO SOLNS. OF I, THE SHIFT WAS 700 AND 500 CM PRIME NEGATIVE, RESP. THE BAS. QUANTUM YIELD AND FLUORESCENCE LIFETIME OF COMPLETELY ANHYD., DEAERATED SOLNS. FO I AND II WERE CONST. IN A GAMMA SUBMAX. RANGE OF 21,000-24,500 CM PRIME NEGATIVE. THE QUENCHING EFFECT OF O<sub>2</sub> DROPPED IN THE ORDER HEXANE GREATER THAN DECALIN GREATER THAN TOLUENE GREATER THAN DIOXANE, AND WAS ALMOST ABSENT IN BUOH AND ETOH. WATER IN THE CONCNS. THAT ARE USUALLY PRESENT IN PREVIOUSLY DRIED SOLVENTS WITH ACCESS OF AIR (E.G., 0.001-0.002 AND 0.01-0.015 VOL PERCENT IN HEXANE AND PHME, RESP.) CAUSED SIGNIFICANT ALTERATION IN THE FLUORESCENCE SPECTRA AND FLUOROMETRIC BEHAVIOR OF THE N SUBSTITUTED AMINOPHTHALIMIDES.

UNCLASSIFIED



USSR

UDC 621.373:535

ARISTOV, A. V., VEMBER, T. M., KCZLOVSKIY, D. A., CHERKASOV, A. S.

"Photochemical Method of Determining the Luminous Pumping Energy Absorbed by Rhodamine Dyes Under Conditions of Stimulated Emission"

Leningrad, Optika i Spektroskopiya, Vol 33, No 5, Nov 72, pp 961-965

Abstract: A photochemical method is proposed for determining the quantum light sum absorbed by a rhodamine 6G solution with flash-tube stimulation of emission. The method is based on sensitized photo-oxidation of anthracene compounds in nondeoxygenated solutions by excited molecules of a "generating" organic phosphor. The proposed method is used to determine the limiting coefficient of conversion of optical pumping energy to stimulated emission by ethanol solutions of rhodamine 6G with flash-tube excitation.

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- 59 -

1/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--QUENCHING OF THE FLUORESCENCE OF NITROGEN CONTAINING HETEROCYCLIC  
COMPOUNDS BY ANTHRACENE DERIVATIVES -U-  
AUTHOR-(03)-UBYKNOVENNAYA, I.YE., REZNIKOVA, I.I., CHERKASOV, A.S.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 594-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, PHYSICS  
TOPIC TAGS--FLUORESCENCE, HETEROCYCLIC NITROGEN COMPOUND, ANTHRACENE,  
NAPHTHALENE, QUINOLINE, LUMINESCENCE QUENCHING, EXCITED STATE, COMPLEX  
COMPOUND, ELECTRON ACCEPTOR  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FAME--2000/2051 STEP NO--UR/0048/70/034/003/0594/0598  
CIRC ACCESSION NO--AP0125639  
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125639

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF ANTHRACENE (I), ITS 9-ME, 9-PR, 9,10-DI-ME, AND 0,10-DI-PR HOMOLOGS, 9,ACETYLANTHRACENE, 9,BROMOANTHRACENE, 1,2,BENZANTHRACENE, ACRIDIEN(II), NAPHTHALENE (III), AND QUINOLINE (IV) ON THE FLUORESCENCE OF 9,AMINOACRIDINE, 3,6,BIS(DIMETHYLAMINO)ACRIDINE (IN THE PRESENCE OF 10 PRIME NEGATIVE2 MOLE-L. HCL OR KOH), AND RIBOFLAVINE (V) IN ETOH WAS STUDIED, AND THE ABS. QUENCHING CONSTS. ARE TABULATED. NEITHER THE FLUORESCENCE NOR THE ABSORPTION SPECTRA OF THE LUMINOPHORS UNDER STUDY ALTERED ON THE ADDN. OF I DERIVS. MOST OF THE OTHER COMPS. SHOWED PRONOUNCED QUENCHING EFFECT. THE FLUORESCENCE YIELD B DECREASED AS A FUNCTION OF THE QUENCHING AGENT CONC. (A SUB2) IN ACCORDANCE WITH THE STERN FOLMER VAVILCV RELATION B SUBO-B EQUALS 1 PLUS K(A SUB2). THE SIMULTANEOUSLY OBSD. DECREASE IN THE DURATION OF FLUORESCENCE WITH INCREASING (A SUB2) SUGGESTED AN INTERACTION BETWEEN THE QUENCHING AGENT AND LUMINOPHOR MOLS. IN AN EXCITED RATHER THAN GROUND STATE. THE QUENCHING CONSTS. OF THE 9-PR AND 0,10-DI-PR HOMOLOGS OF I WERE ALWAYS LOWER AS COMPARED WITH THE RESP. ME COMPS. ALSO THE INTERMEDIATE COMPLEXES FORMED BY THE INTERACTION WERE PRESUMED TO POSSESS A SANDWICH STRUCTURE. THE TRICYCLIC MOLS. OF THE ANTHRACENES AND II THAT STERICALLY CORRESPONDED TO THE AMINOACRIDINES UNDER STUDY ALSO HAD CONSIDERABLY STRONGER QUENCHING EFFECT THAN THEIR BICYCLIC ANALOGS III AND IV. THE QUENCHING EFFECT WAS MORE PRONOUNCED IN THE ACIDIC FORMS THAN IN THE ALK. FORMS OF THE AMINOACRIDINES, AND THE STRONGEST QUENCHING BY THE ANTHRACENES WAS OBSD. IN V, WHICH POSSESSES A DISTINCT ELECTRON ACCEPTOR CHARACTER.

UNCLASSIFIED

1/2 007

UNCLASSIFIED

PROCESSING DATE 20NOV70

TITLE--TYPIFICATION OF HYDROGRAPHS OF LIQUID AND SEDIMENT RUNOFF FOR  
ESTIMATION OF DEBIT STABILITY OF INFILTRATIONS WATER INTAKES -U-  
AUTHOR-(04)-SERGUTIN, V.YE., PORYADIN, A.F., TURUTIN, B.F., CHERKASOV,  
A.YE.

CCOUNTRY OF INFO--USSR

SOURCE--METEOROLOGIYA I GIDROLOGIYA, 1970, NR 5, PP 76-81

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--RUNOFF, RIVER WATER, SEDIMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3005/0087

STEP NO--UR/0050/70/000/005/0076/0081

CIRC ACCESSION NO--AP0132380

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132380

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TYPIFICATION OF WATER REGIME OF RIVERS IS PERFORMED ACCORDING TO THE PRINCIPLE OF MOTION SYNCHRONISM OF LIQUID (Q) AND SEDIMENT (G) RUNOFF (DISCHARGES), I.E. ACCORDING TO COINCIDENCE OF PEAKS OF WATER AND TURBIDITY DUE TO SUSPENDED LOAD DURING THE SPRING AND SUMMER FLOODS. TYPIFICATION OF COMBINED HYDROGRAPHS Q AND G DISCHARGES IS PERFORMED ON THE BASIS OF WELL KNOWN REGULARITIES OF INTRA ANNUAL DISTRIBUTION OF THE RIVER RUNOFF. CERTAIN EXAMPLES ON THE CONTROL OF INFILTRATION WATER INTAKES OPERATION ARE GIVEN.  
FACILITY: KRASNOYARSKIY INSTITUT TSIVETNYKH METALLOV.

UNCLASSIFIED

USSR

UDC 517.946

CHEPKASOV, I. D., Krasnodar

"Transformation of Second-Order Linear Equations"

Kazan', Izvestiya Vysshikh Uchebnykh Zavedeniy -- Matematika, No 2, Feb 73,  
pp 106-115

Abstract: Let  $\phi$  be an  $n$ -dimensional arithmetic space on some region thereof and  $x = (x^1, \dots, x^n)$  a point thereof. Let  $A^{\alpha\beta} = A^{\beta\alpha}$ ,  $B^\alpha$ ,  $C$ ,  $V$  - given fixed  $\alpha, \beta$  - be square matrices of dimension  $m \times m$ , defined and continuous in  $\phi$ . The purpose of the article is to study equivalence and reducibility conditions when each of the matrices encountered commutes with the rest. The article considers systems of ordinary differential equations, general conditions for local reducibility, and reduction by means of functions which depend on only one argument.

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- 3 -

Construction

USSR

UDC 624.131.43:531.5

CHERKASOV, I. I., MIKHEEV, V. V., PETRUKHIN, V. P., PAKULIN, V. A., SNARSKII, A. S., and SHVAREV, V. V.

"Effect of Gravity on Mechanical Properties of Soils"

Moscow, Osnovaniya, fundamenty i mekhanika gruntov. No 1, 1970, pp 14-18

Abstract: Results are given of an experimental investigation of the effect of gravity on mechanical properties of soils, conducted in an aircraft and in a centrifuge. The first series of experiments were conducted in a specially equipped TU-104 aircraft flying along a specific trajectory. Along a section of this trajectory the soils were subjected to an acceleration  $a = 1.62\text{m/sec}^2$  for 8 seconds, i.e.  $1/6$  g at ground level. The second series were conducted on a centrifuge, on which soils were subjected to 55.1, 98.1 and  $196.2\text{m/sec}^2$  acceleration, i.e. 5.6, 10, and 20 g. Both series of tests contained controlled tests in motionless aircraft and centrifuge. The overload coefficient  $\eta = a/g$  varied from 0.165 to 20. Experimental setups and techniques for both the aircraft and centrifuge tests are described in detail. A photograph of the airborne equipment and a schematic drawing of the centrifuge are presented. Four types of soils were tested, whose physico-mechanical properties are given in a table. They are: 1) silica sand;

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CHERKASOV, I.I., et al., Osnovaniya, fundamenty i mekhanika gruntov. No 1, 1970, pp 14-18

2) agloporite gravel with negligible bond and of low specific weight; 3) keramsit gravel, loose material with rounded granules; 4) soft plastic clay of great specific weight, with strong bond and small internal friction angle. The results are presented in graphs and tables. They show that at 6g the angle of rest in agloporite and keramsit gravels decreases while it remains nearly constant in the silica sand. An analysis of motion picture records shows that a certain reduction in angle of rest is related to the aircraft vibration. Thus, it is considered that the variation of gravity has no effect on the angle of rest of loose granular soils. A specially adapted H-700 oscillograph was used for recording experiments in the centrifuge. The deformation aptitude of both type of soils was determined, taking the sag of the pressing stamp under  $1\text{kg/cm}^2$  pressure on the base, as a comparability criterion.

A comparison with theoretical data for carrying power shows that:  
1) the gravity variation in accordance with the theory of limit equilibrium, substantially affects the carrying power of sand and weakly affects that of plastic clay; 2) in contrast to the theory of limit equilibrium the carrying power of sand varies a little less than in direct proportion to gravity. The carrying power of clay does not remain constant, but increases slightly with gravity. The causes of these discrepancies are discussed and tentatively explained. Orig. art. has: 6 figures, 7 tables.

2/2

- 27 -



USSR

UDC 612.841.617.721.6+612.842.67-085.835.3-073

CHERKASOV, I. S., Doctor of Medical Sciences, SHIBINSKAYA, N. I., Docent,  
KOBOZEVA, O. I., Candidate of Medical Sciences, RADKOVSKAYA, A. YA., and  
IL'YASHENKO, A. P., Physician, Chair of Eye Diseases, Odessa Medical Institute  
and Basseyanova Hospital for Mariners

"Hydrodynamics of the Eye and Vascular Pressure in Healthy Man During Hyper-  
baric Oxygenation"

Odessa, Oftal'mologicheskii Zhurnal, No 8, 1971, pp 575-577

Abstract: The investigation was performed on 10 healthy subjects aged 18-34, in a 4.5 m<sup>3</sup> pressure chamber which was continuously ventilated to maintain oxygen concentration at 40-60% under conditions of normal temperature, humidity and CO<sub>2</sub>, and at a pressure of 2.5 atm. The following determinations and calculations were performed: tonography, blood pressure in the brachial artery and in the central artery of the retina, average dynamic arterial pressure, the retino-brachial coefficient, and the coefficient of Lobstein. The results revealed that hyperbaric oxygenation produces no significant changes in the hydro- and hemodynamics in the eyes of healthy individuals. A small decrease in intraocular fluid secretion and intraocular pressure occurred during exposure to 2.5 atm. After decompression, production of the intraocular fluid was increased somewhat due to a greater blood flow, but soon returned to normal.

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1/2 017 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--SHRINKAGE DEFECTS IN FOUNDRY IRON INGOT MOLD CASTINGS -U-  
AUTHOR-(02)-CHERKASOV, L.M., KOLESNIK, L.A.  
COUNTRY OF INFO--USSR  
SOURCE--LITEINOE PROIZVOD. 1970, (3), 31-2  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--MATERIALS  
  
TOPIC TAGS--METAL CASTING, METAL SHRINKAGE, CAST IRON, MAGNESIUM  
CONTAINING ALLOY, INOCULATION  
  
CONTROL MARKING--NO RESTRICTIONS  
  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3005/0140 STEP NO--UR/0128/70/000/003/0032/0032  
CIRC ACCESSION NO--AP0132432  
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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132432

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF HYPEREUTECTOIDAL GRAPHITE ON THE SHRINKAGE CAVITIES DEVELOPMENT WAS STUDIED ON THE FOLLOWING 5 IRONS: BLAST FURNACE PIG, BLAST FURNACE CAST IRON, BLAST FURNACE MIXED IRON, BLAST FURNACE CAST IRON INOCULATED WITH MG, CUPOLA IRON (C 4.25, 4.10, 4.18, 3.60-3.75, 3.48; SI, 0.75, 2.00, 1.42, 2.13-2.26, 1.9; MN 1.24, 0.75, 0.92, 0.72-0.80, 0.70; S 0.050, 0.041, 0.038, 0.006-0.010, 0.09; AND P 0.071, 0.100, 0.092, 0.096-0.103, 0.20 WT. PERCENT. TWO KINDS OF SAMPLES WERE TAKEN DIRECTLY FROM THE LADLE: (1) A CONVENTIONAL ROD SAMPLE, AND (2) INTO A METALLIC VESSEL LINED INSIDE WITH A THIN LAYER OF A SAND CLAY RAMMING MIX. (2) HAD SMALL SHRINKAGE CAVITIES BUT THE DIMENSIONS OF THE CASTING WERE DIMINISHED. (1) DEVELOPED CONCD. SHRINKAGE CAVITIES, TO SEVERAL TIMES LARGER EXTENT THAN IN (2). IN (2) THE LEAST VOL. OF SHRINKAGE DEFECTS WERE FOUND IN THE BLAST FURNACE CAST IRON FOR REMELTING, AND THE LARGEST VOL. IN THE BLAST FURNACE CAST IRON FOR FOUNDRY USE. IN (1) THE REVERSE WAS TRUE. THE VOL. OF SHRINKAGE CAVITIES IS REDUCED ONLY BY THE FORMATION OF HYPEREUTECTOIDAL GRAPHITE, WHICH CRYSTALLIZES IN THE MOLDS BELOW THE TEMP. OF CASTING. THE GRAPHITE, FORMED AS A REFINING FOAM AT HIGHER TEMPS., INCREASED THE PSEUDOPOROSITY, BECAUSE OF THE LARGER SP. VOL. OF THE FOAM. SHRINKAGE CAVITIES WERE FORMED IN BLAST FURNACE CAST IRON ONLY WHEN THE CASTING TEMP. IS TOO HIGH OR IF THE CORE OF THE MOLD YIELDED TOO MUCH. MOLDS MADE FROM CUPOLA CAST IRON OFTEN SHOW SHRINKAGE CAVITIES AT THE BOTTOM WHICH CAN BE DECREASED EITHER BY INCREASING C CONTENT IN CAST IRON OR BY REDUCING THE CASTING TEMP.

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Acc. Nr:

AAO 108718-*CHERKASOV*

Abstracting Service:

Ref. Code: *L.M.*

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,  
Derwent, 3/70

*1/2*

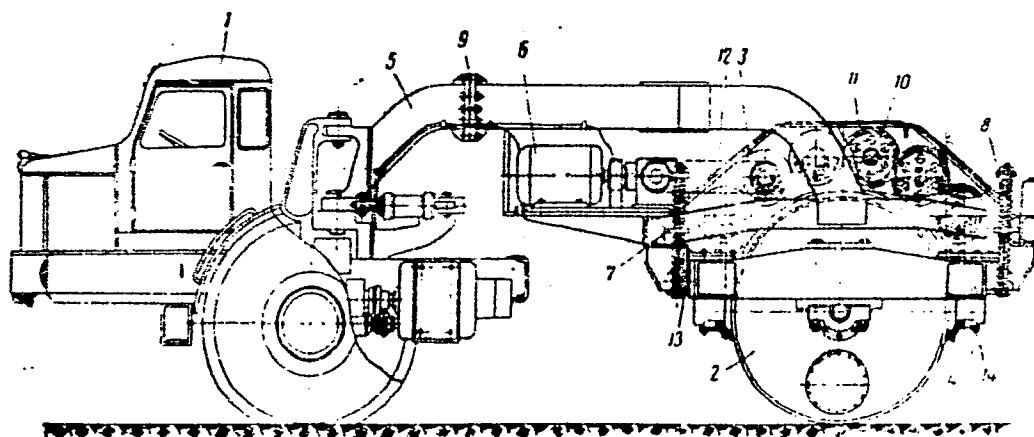
243649 VIBRO-ROLLER FOR GROUND TAMPING has an additional frame (7) and drive (6) between the saddle frame (5) and vibrator frame (4) which is rigidly coupled to the saddle frame but linked to the vibrator frame by shock absorbers (8). The saddle frame is compound and joined by a pneumo-hydraulic absorber (9). The vibrator driven by 6, passes torque via spur gears (11) to gears which turn the disbalancers to produce vertical plane vibration. Scrapers (14) trim the roller (2).  
27.9.62 as 796637/29-14. SMOLYAR.A.A.et al.(13.10.69)  
Bul 17/14.5.69. Class 19c. Int.Cl.E Olc.

*CK 18*

REEL/FRAME  
19900490

**AAQ 108718**

AUTHORS: Smolyar, A. A.; Somov, V. I.; Cherkasov, L. M.



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19900491

CK

Acc. Nr:

AP0048884

Abstracting Service:

CHEMICAL ABST.

4/70

Ref. Code:

UR0079

90560w Interaction of adducts of lithium alkyls and enyne hydrocarbons with trimethylchlorosilane. Zubritskii, L. M.; Bal'van, Kh. V.; Cherkasov, L. N. (Leningrad. Tekhnol. Inst. im. Lensovet, Leningrad, USSR). Zh. Obshch. Khim. 1969, 39(12), 2807-701 (Russ). EtLi in Et<sub>2</sub>O freed of excess Li and treated at -30° with EtC:CCH:CH<sub>2</sub>, followed by Me<sub>3</sub>SiCl gave 62% products, C<sub>11</sub>H<sub>22</sub>Si, after an aq. treatment, composed of 58% Me<sub>3</sub>SiCR:C:CHCH<sub>2</sub>R<sup>1</sup> (R = R<sup>1</sup> = Et), and 42% Me<sub>3</sub>SiCHRC:CCH<sub>2</sub>R<sup>1</sup>, the mixt. b<sub>2</sub>: 40-3°; similarly were prepd. the analogs, in mixts. with R = Me<sub>2</sub>C, Pr, Et, Me or Ph, and R<sup>1</sup> = Et, Bu, CMe<sub>3</sub> or Ph. Only with R = Me<sub>2</sub>C and R<sup>1</sup> = Et, Bu, or Ph, was the product indicative of a single component compn. with the following Me<sub>3</sub>SiCHRC:CCH<sub>2</sub>R<sup>1</sup> (R = Me<sub>2</sub>C) (R<sup>1</sup> and b.p. given): with Ph, b<sub>2</sub> 92-4°; Et b<sub>2</sub> 46-9°; and Bu, b<sub>2</sub> 75-80. In all other combinations generally the allenic product was the predominant one. The structures were confirmed by spectral data and results of oxidn. to acids. G. M. Kosolapoff

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19800654

Acc. Nr.

A70045700

Abstracting Service:

CHEMICAL ABST

4170

Ref. Code

UR0153

89913g Reaction of alkylolithium compounds with vinyl-phenylacetylene. Cherkasov, L. N.; Pis'mennaya, G. I.; Bal'van, Kh. V. (Sib. Tekhnol. Inst., Krasnoyarsk, USSR). *Izv. Vyssh. Ucheb. Zaved., Khim. Khim. Tekhnol.* 1969, 12(10), 1368-70 (Russ). In the reaction of LiR, where R is alkyl, with  $\text{CH}_2=\text{CHC}(\text{CPh})$ , an arylallene  $\text{RCH}_2\text{CH}=\text{C}(\text{CPh})$  is formed by addn. of R to the terminal C of the vinyl group. The following compds. are prepd. by this reaction:  $\text{BuCH}_2\text{CH}=\text{C}(\text{CPh})$ ,  $b_p$  110-11°,  $d_4^{20}$  0.8950,  $n_D^{20}$  1.5389;  $\text{AmCH}_2\text{CH}=\text{C}(\text{CPh})$ ,  $b_p$  128-9°, 0.8952, 1.5310;  $\text{C}_6\text{H}_{13}\text{CH}_2\text{CH}=\text{C}(\text{CPh})$ ,  $b_p$  105-6°, 0.8948, 1.5257;  $\text{C}_7\text{H}_{15}\text{CH}_2\text{CH}=\text{C}(\text{CPh})$ ,  $b_p$  133-4°, 0.8901, 1.5215; iso-BuCH<sub>2</sub>CH=C(CPh),  $b_p$  58°, 0.8965, 1.5369; and iso-PrCH<sub>2</sub>CH=C(CPh),  $b_p$  84-5°, 0.8931, 1.5349.

C. E. Stevenson

REEL/FRAME

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AA0040696

C

Cherkasov, N.K.  
UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-70

241947 FORGING METHOD for hollow articles such as pipes. In the conventional methods i.e. by drawing and rolling the elasticity of the metal has to be allowed for. This new methods seeks to draw the article through a multi start threaded nut where the threads reduce to '0' towards the exit thus controlling the metal flow in the cross and longitudinal direction.

27.12.65 as 1045697/25-27. V.S. RUDOV & OTHERS. PIPE RES. & DES. INST. (26.8.69) Bul 14/PS.4.69. Class 49h Int.Cl.B 23k.

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19750320



AA0040696

AUTHORS: Rudoy, V. S.; Cherkasov, N. K.; and Fesenko. G. M.

Vsesoyuznyy Nauchno - Issledovatel'skiy i Konstruktorsko -  
Tekhnologicheskiy Institut Trubnoy Promyshlennosti

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USSR

UDC: 621.791.793:546.821

3

GRABIN, V. F., Candidate of Technical Sciences, NOVIKOV, YU. K., Engineer, GUREVICH, S. M., Doctor of Technical Sciences, KOMPAN, YA. YU., Candidate of Technical Sciences, NOVIKOVA, D. P., Candidate of Technical Sciences, Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences of the Ukrainian SSR, CHERKASOV, N. I., Engineer, Tashkent Aviation Plant imeni Chkalov

"Structure and Properties of the Weld Zone During the Electro-Slag Welding of High-Strength Titanium Alloy"

Kiev, Avtomaticheskaya Svarka, No 9, Sep 73, pp 20-23

Abstract: The authors study the reasons for the reduced impact strength in the weld zone during the electro-slag welding of titanium alloy; ways are also sought for increasing ductility. The joints were studied with edges 60 mm thick which were done by electro-slag welding at 1700-2000 amps and 24-25 v, using the AN-T4 flux. Metallographic and x-ray analyses of the weld zone metal in its state after welding show that the metal structure is of the martensite alpha prime phase and residual beta phase type. The results show that the reduction of the impact strength in the weld zone during the electro-slag welding of an alloy of the titanium-vanadium-molybdenum-chromium-iron-zirconium system is conditioned by polygonization which is conditioned by a reversible alpha to beta phase transition and by the development of welding stresses during cooling. It is also shown that annealing at 750°C increases the impact strength of the joints.

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- 71 -

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USSR

UDC 541.8:547.831:547.261/262

POPOV, V. A., YUSHKOVA, I. K., BOLAVINA, I. G., CHERKASOV, N. KH., and  
KHARLAMPOVICH, G. D.

"Study of the Solubility of Monosubstituted Quinoline, Isoquinoline, Quinaldine,  
and Lepidine Phosphates in Ethanol and Methanol of Different Concentrations"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 44, No 11, Nov 71, pp 2589-2591

**Abstract:** Solubility of monosubstituted quinoline, isoquinoline, quinaldine,  
and lepidine phosphates in aqueous-alcoholic mixtures of ethanol and methanol  
increases with with temperature increase and with a drop in the concentration  
of alcohols. In the 0-10° temperature range the phosphates can be arranged in  
the following order of decreasing solubility: lepidine phosphate isoquinoline  
phosphate quinoline phosphate quinaldine phosphate. In the 30-50° range the  
order is: isoquinoline phosphate quinaldine phosphate lepidine phosphate  
quinaldine phosphate. These differences in their solubility may be used to  
obtain pure products.

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- 69 -

USSR

UDC 621.791.756.011

CHERKASOV, N. N., ABRALOV, M. A., CULTANOV, U. T., and KUDINOV, A. V.,  
Tashkent Polytechnical Institute

"Effect of Technological Factors on the Properties of VT-22 Weld Joints Produced by Electroslag Welding"

Tashkent, Izvestiya Akademii Nauk, Uzbek SSR--Seriya Tekhnicheskikh Nauk, No 6, 1972, pp 46-48

Abstract: Plates of titanium alloy VT-22 were welded by the electroslag welding process and heat treated at different temperatures to obtain the highest values of strength and ductility. From this work it was established that at 750 C the best values of impact strength for the seam metal, heat affected zone and base metal. The weld joint, when annealed at 800-850 C, was more ductile than after annealing at 750 C, but due to an inadmissible lowering of strength properties for both the seam and base metal, annealing above 750 C was not recommended.

The optimum welding process for VT-22 plates 30 and 60 mm thick was a welding current of 1200-1500 and 1800-2400 amp respectively at a welding voltage of 24-25 v and an argon consumption of 20-25 liter/min. 1 figure, 2 bibliographic references.

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